

Section VII: Percolation Tests

Calculators will be needed

Section VII Percolation Tests (pg. 36)

- Perc. tests are done in the primary and reserve septic areas prior to the septic system design.
- The perc. test is a major component in the design of system
- demonstrates how quickly water penetrates or percolates through the soil.

Perc Tests

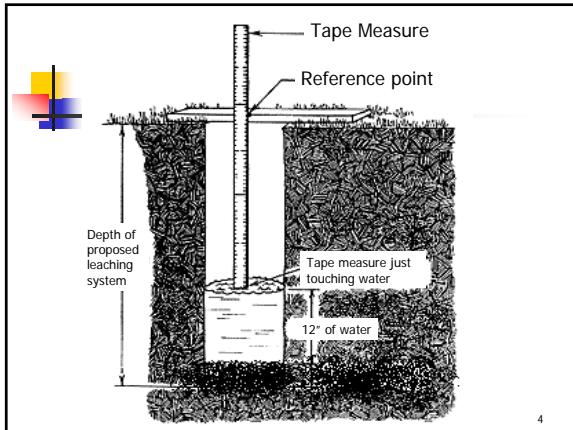
2


Perc. Tests

- The test is made in a 6" to 12" hole dug to the depth of the proposed leaching system.
- The percolation test is done in only one soil strata at a time.

Perc Tests

3





Perc. Tests

Step one: Presoak

- The hole is pre-soaked to allow clay in the soil to saturate and swell.
 - If water seeps away in 2 hours the hole may be refilled with 12" of water and the test may begin
 - If water remains after 2 hours re-fill the hole with 12" of water and allow to presoak for an additional 2 hours

Perc. Tests
5





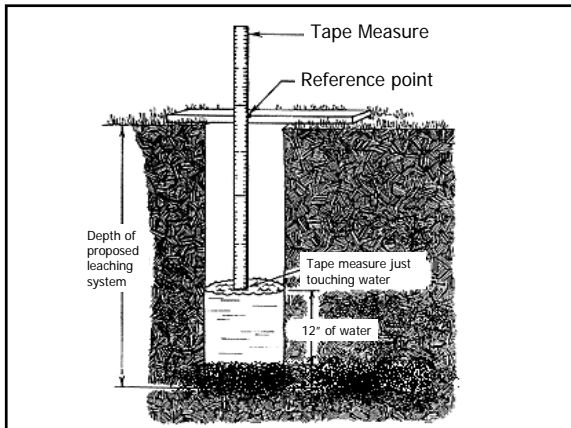
Perc. Tests

Step Two: Re-fill

- After the percolation hole has been properly presoaked it is filled with 12" of water.
- The test must be conducted within 30 hours of pre-soaking

Perc Tests

7





Perc. Tests

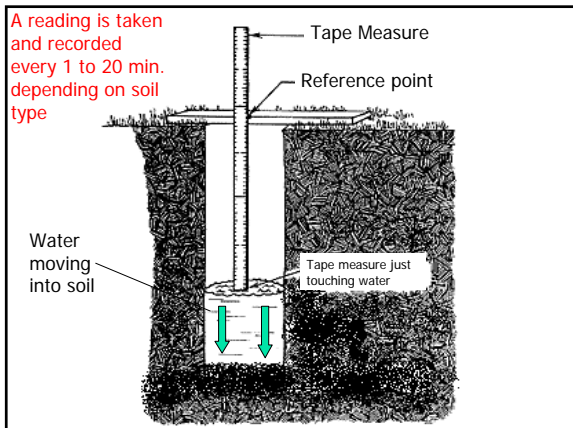
Step Three: Monitor and Record

- Record the water level drop at the fixed point using timed intervals between 1 and 20 minutes.



Perc Tests

9





Perc. Tests

Step four: Determine Perc. Rate

- Reading should be in decimal form
- To determine the drop subtract last reading from previous reading
- Then divide the difference in reading into the time. (Time ÷ Reading)
- Units will be measured in minutes per inches drop. (3 inches in 10 min. = 1inch in 3.33 min. which would be 1 inch in 10 minutes for design.)

Perc Tests 12



Math Class Review

Calculating fraction to decimal

Fraction		Decimal
1/8	=	.125
1/4	=	.25
3/8	=	.375
1/2	=	.5
5/8	=	.625
3/4	=	.75
7/8	=	.875

Determine Perc. Rate

Time	Reading (Inches)	Reading in Decimal	Diff.	Rate (min/inch)
10:00	12-3/8	12.375		
10:10	14-5/8	14.625	2.25	4.44
10:20	15-7/8	15.875	1.25	8.00
10:30	16-1/4	16.250	.375	26.66
10:40	16-5/8	16.625	.375	26.66
10:50	17-1/8	17.125	.5	20.00
11:00	17-5/8	17.625	.5	20.00

Perc Tests
15



Percolation Tests

- Sizing for systems in fill
 - Utilize slower perc. rate of natural soil or fill.
 - Leaching system sizing (ELA) for systems totally in fill can be based on 10-20 minutes per inch, rather than 20-30, for sites with natural soil percolation rate slower than 20 minutes per inch. MLSS is based on natural soil percolation rate.

Perc Tests

16
